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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,412	01/29/2004	Charlie Steinmetz	200209323	6968

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER
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MARTIN, LAURA E

ART UNIT	PAPER NUMBER
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2853

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/768,412	Applicant(s) STEINMETZ ET AL.	
	Examiner Laura E. Martin	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,7-12 and 15-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 7-12, and 15-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7, 8, 12, 15, 18-20, 27, 28, 30, 31, and 35-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (US 20030025773) in view of Schefflin (US 5675367)

#### **Koizumi et al. discloses the following claim limitations:**

As per claim 1: a printing fluid container comprising: an off-axis printing fluid reservoir (figure 1, element 22) configured to hold a free volume of air and printing fluid mixed together therein (printing fluid and air are in the container together), the printing fluid reservoir having a substantially planar edge (figure 1, element 22); a printing-fluid interface (figure 1, element 24) on the leading edge and extending into the reservoir and configured to move the printing fluid out of the printing fluid reservoir [0045]; and an air-interface (figure 1, element 30) on the leading edge and extending into the reservoir and configured to move air into the printing-fluid reservoir in response to the movement of the printing-fluid out of the reservoir [0045].

As per claim 3: the leading edge of the printing fluid is on an upright surface configured for lateral insertion into a printing system (figure 1, element 17 is laterally inserted into the printhead, element 12).

As per claims 7, 19, 39, 40, and 41 the printing fluid interface is configured to laterally output the printing fluid (figure 1, element 17, there is a lateral part of the supply device).

As per claims 8, 20, and 41, the air interface configured to laterally input air (figure 1, element 26, there is a lateral portion of the air supply line).

As per claim 12: a printing fluid container comprising: an off-axis printing fluid reservoir (figure 1, element 22) configured to hold a free volume of air and printing fluid mixed together therein (printing fluid and air are in the container together), the printing fluid reservoir having a leading edge (figure 1, element 22) configured for lateral insertion into a printing system (figure 1, element 17 is laterally inserted into the printhead); a printing-fluid interface (figure 1, element 24) on the leading edge and extending into the reservoir and configured to move the printing fluid out of the printing fluid reservoir [0045] during a first mode; and an air-interface (figure 1, element 30) on the leading edge and extending into the reservoir and configured to move air into the printing-fluid reservoir in response to the movement of the printing-fluid out of the reservoir [0045] during a first mode.

As per claim 15: the leading edge has a substantially planar profile (figure 1).

As per claim 18: a single structural piece forms the leading edge (figure 1, a single piece forms the bottom of the ink tank).

As per claim 27: the printing-fluid interface is configured to receive a fluid connector (figure 1, element 15) that is in fluid communication with a printing-fluid

ejector (figure 1, element 11) upon installation of the printing-fluid container into a printing system.

As per claim 28: the printing-fluid interface is configured to deliver printing fluid to the printing fluid ejector via the fluid connector during the first mode of operation

As per claim 30: the air interface is configured to receive a fluid connector (figure 3, element 26) that is in fluid communication with a venting assembly (figure 3, element 31) upon installation of the printing fluid container into the printing system.

As per claim 35: a printing fluid container comprising: a reservoir means for holding a free volume of printing fluid and air mixed together therein (figure 1, element 22), means for laterally outputting printing fluid from the reservoir during a first mode of operation and inputting air during a first mode of operation [0045].

As per claim 36: means for laterally outputting fluid is vertically aligned below the means for regulating pressure (figure 1, elements 17 and 18 – there are two ways of regulating pressure, the pump, attached to 18 and air input, element 27).

As per claim 37: the means for laterally outputting printing fluid and means for regulating pressure are arranged on a single structural piece (figure 1, elements 24 and 30 and elements 17 and 18).

As per claim 38, a method of supplying printing fluid, comprising: storing a free volume of air and printing fluid mixed together therein (printing fluid and air are in the container together) in a reservoir having an air interface and a printing fluid interface; allowing printing fluid to exit the reservoir through the printing fluid interface and

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allowing air to enter the reservoir through the air interface during a first mode of operation.

**Koizumi et al. does not disclose the following claim limitations:**

As per claims 1, 7, 8, 12, 19, 20, and 38-41 air and printing fluid moving into and out of the reservoir during a first and second mode.

**Schefflin discloses the following claim limitations:**

As per claims 1, 7, 8, 12, 19, 20, 31, 38, and 41 air and printing fluid moving into and out of the reservoir during a first and second mode (column 10, lines 30-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid container taught by Koizumi et al. with the disclosure of Schefflin in order to more easily refill the ink tank.

Claims 9-11, 26, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (US 20030025773) and Schefflin (US 5675367), and further in view of Barinaga (US 5721576).

**Koizumi et al. as modified discloses the following claim limitations:**

A printing fluid assembly containing an air interface and a printing fluid interface.

**Koizumi et al. as modified does not disclose the following claim limitations:**

As per claims 9, 10, 26, and 29: a ball and septum assembly.

As per claims 11 and 32: the printing fluid interface and air interface respectively configured to conditionally block input and output of printing fluid and air unless engaged by a fluid container.

**Barinaga discloses the following claim limitations:**

As per claims 9, 10, 26, and 29: a ball and septum assembly (figure 8, elements 102 and 104).

As per claims 11 and 32: the printing fluid interface and air interface respectively configured to conditionally block input and output of printing fluid and air unless engaged by a fluid container (column 6, lines 4-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid assembly taught by Koizumi et al. as modified with the disclosure of Barinaga in order to prevent leaks from the printing fluid container.

Claims 16, 17, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (US 20030025773) and Schefflin (US 5675367), and further in view of Childers (US 6116723).

**Koizumi et al. as modified discloses:**

The apparatus of claim 12.

**Koizumi et al. as modified does not disclose the following claim limitations:**

As per claim 16: the air-interface is above the printing-fluid interface on the leading edge of the printing-fluid reservoir.

As per claim 17: the air-interface is vertically aligned above the printing-fluid interface on the leading edge of the printing fluid reservoir.

As per claim 21: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure substantially equivalent to an ambient atmosphere pressure.

As per claim 22: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure above an ambient atmosphere pressure.

As per claim 23: the air-interface is configured to regulate pressure within the printing fluid reservoir to an operating pressure below an ambient atmosphere pressure.

As per claim 24: the air-interface actively regulates pressure within the printing-fluid reservoir.

As per claim 25: the air-interface passively regulates pressure within the printing-fluid reservoir.

**Childers et al. discloses the following claim limitations:**

As per claim 16: the air-interface (figure 1, element 26) is above the printing-fluid interface (figure 1, element 36) on the leading edge of the printing-fluid reservoir.

As per claim 17: the air-interface (figure 1, element 26) is vertically aligned above the printing-fluid interface (figure 1, element 36) on the leading edge of the printing fluid reservoir.

As per claim 21: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure substantially equivalent to an ambient atmosphere pressure (column 2, lines 33-43).



As per claim 22: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure above an ambient atmosphere pressure (column 4, lines 40-57).

As per claim 23: the air-interface is configured to regulate pressure within the printing fluid reservoir to an operating pressure below an ambient atmosphere pressure (column 4, lines 40-57).

As per claim 24: the air-interface actively regulates pressure within the printing-fluid reservoir (column 2, lines 33-43).

As per claim 25: the air-interface passively regulates pressure within the printing-fluid reservoir (column 4, lines 40-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid container taught by Koizumi et al. with the disclosure of Childers et al. in order to provide a higher quality printing apparatus in which the pressure is properly regulated.

Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (US 20030025773) in view of Schefflin (US 5675367) and Barinaga (US 5721576).

**Koizumi et al. discloses the following claim limitations:**

As per claim 33: an off-axis printing fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein (figure 1, element 22); an upright leading edge of the printing fluid reservoir wherein the printing fluid interface is

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configured to output printing fluid from the printing fluid reservoir during a first mode and a printing fluid interface on the leading edge of the printing fluid reservoir wherein the air interface is configured to regulate pressure within the printing fluid reservoir by inputting air into the printing fluid reservoir during a first mode; and wherein the container is laterally installed into a printing system (figure 1, element 17 is laterally installed into the printhead) and the first fluid container engages the printing fluid interface and a second fluid container engages the air interface (figure 1, element 29).

As per claim 34: a single structural piece forms the upright leading edge of the printing fluid reservoir (figure 1, element 22)

**Koizumi et al. does not disclose the following claim limitations:**

A second mode in which the air exits the printing fluid container and fluid enters the printing fluid container and a ball and septum assembly.

**Schefflin discloses the following claim limitations:**

Air and printing fluid moving into and out of the reservoir during a first and second mode (column 10, lines 30-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid container taught by Koizumi et al. with the disclosure of Schefflin in order to more easily refill the ink tank.

**Barinaga discloses the following claim limitations:**

As per claims 9, 10, 26, and 29: a ball and septum assembly (figure 8, elements 102 and 104).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid assembly taught by Koizumi et al. with the disclosure of Barinaga in order to prevent leaks from the printing fluid container.

### ***Response to Arguments***

Applicant's arguments filed 12/19/06 have been fully considered but they are not persuasive.

Applicant argues that Koizumi teaches away from modifying the atmosphere releasing tube to move air out of the ink tank; however, the examiner disagrees. While Koizumi teaches only the ink flowing out of the tank and the air flowing into the tank during the printing process, it is well known in the art that ink tanks can be refilled, which is shown in column 10, lines 30-37 of Scheffelin et al. Scheffelin et al. discloses the refilling of an ink tank; air is removed from the ink tank and ink is added back into the tank. While Koizumi does not teach modifying the atmosphere releasing tube to move air out of the tank because it would not allow a meniscus of ink to form, the processes in the presented claims do not suggest that the expelling and refilling of air and printing-fluid cannot be two separate steps happening at different times. At some point the ink tank will become empty, and it is well known in the art (for economical reasons, as well as environmental reasons) to recycle the ink tank by means of refilling. At that point, the ink tank and method taught by Koizumi can be modified with the apparatus and method for refilling taught by Scheffelin et al. in order to properly refill. During refilling,

the meniscus of ink would not be a necessity, as the negative pressure comes into use during the printing process and storing process.

The applicant also argues that Scheffelin et al. does not disclose the elements of the independent claims; however, Scheffelin et al. is relied on only as a secondary reference, teaching the refilling of an ink tank wherein the ink enters the ink tank and the air exits the ink tank.

Barinaga and Childers also are relied on as secondary references. While Childers does not disclose a "free volume", Koizumi (the primary reference) disclose a free volume.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

  
MANISH S. SHAH  
PRIMARY EXAMINER